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## THE FABRICATION OF AINO CLOTH.

BY PROF. D. P. PENHALLOW.

IN view of the very uncertain history of the Ainos, it is difficult to obtain reliable information respecting the origin of any of the rude arts with which they appear to be familiar. According to the testimony of the Ainos themselves, weaving has been practiced by them from very early times, while their traditions also state that their knowledge of the art was original and not obtained from the Chinese or Japanese. There appears but little either in support or contradiction of such statements, other than can be obtained by a comparison of the machines used by the Ainos and their Japanese neighbors. Those used by the former involve a simplicity not to be found in any of the Japanese instruments, pointing to originality or marked deterioration in the first case, or, in the second, a greater improvement of original forms than has generally been recognized as a feature of the old style of mechanical ingenuity. While the whole subject is involved in its present obscurity, we can only look upon the statements of the Ainos as of traditional interest.

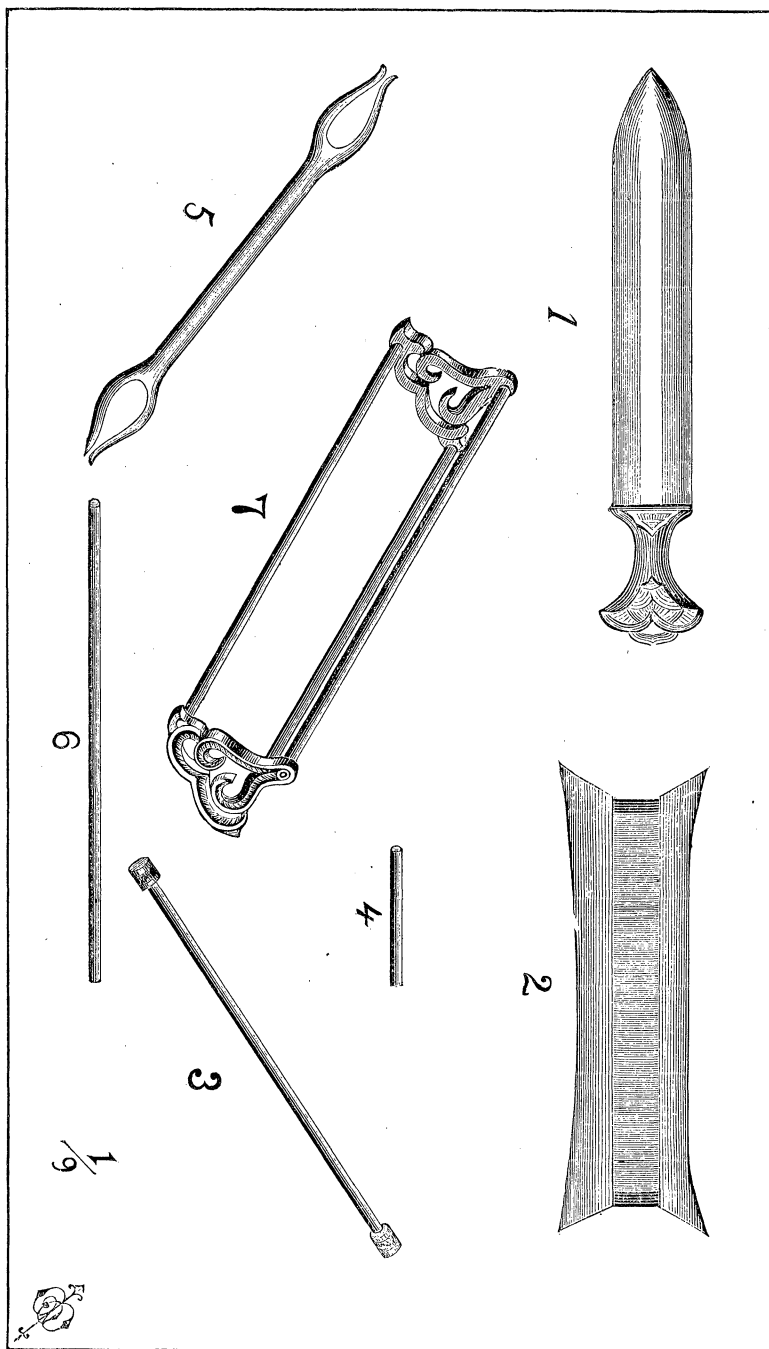
The fabrication of the cloth involves processes and implements of the greatest simplicity, such as may readily be executed or procured under the conditions of a wild forest life. The material used is coarse bast fiber obtained from two species of elm, *Ulmus campestris* and *U. montana*, respectively known to the Ainos as Ākādamo and Ōhiyo. The slight maceration or simple bruising to which the fiber is subjected, results in nothing more than a separation of the various bast layers, no attempt being made to separate individual fibers and produce twisted threads; hence we

find the prepared material very coarse, and the finished product correspondingly so.

As a class, the Ainos are not yet susceptible to the demands of higher and increasing wants. Their desires are few, of a low order, and easily satisfied; and in the matter of clothing, it is sufficient for them to know and feel that their one garment satisfies the demands of decency, that the material costs only the expenditure of time—which, to them, is nothing—and that the processes of preparation and fabrication are both simple and easily accomplished. Delicacy of touch, pliability, fine texture and a pure color are considerations which do not find place in the Aino mind, yet with an exhibition of the truly savage taste which delights in a display of rude and brilliant ornamentation, we find them expending great effort upon their garments to secure striking, if not altogether symmetrical and harmonious decoration.

The collection and preparation of fiber, though properly belonging to the women, is not unfrequently undertaken by the men in connection with their own peculiar work. Thus with a hunting expedition, which may last several days, they often combine the object of collecting bark, either for cloth or the manufacture of ropes; while their visits to pools where the bark is macerating, will be combined with a search for their principal source of farinaceous food—lily bulbs.

The bark is generally drawn from the standing tree. Three or four good blows with the heavy knife, which every man carries, suffice to permit a good hold with both hands, when by the exercise of a little skill, a strip of bark nearly a foot wide, is drawn off quite up to the branches, often a distance of twenty feet. If taken from the Ōhiyo, it is macerated for about ten days in quiet pools of tepid water, such as are common about the borders of swamp lands. As soon as sufficiently macerated, the outer bark readily separates from the bast portion, when this latter is again split into long and broad strips, usually about ten in number. These are then dried slowly to prevent rendering the fiber brittle, after which they are stripped into threads having an average width of one-eighth of an inch. No twisting or other process is performed, but as soon as the threads (*Āh*) have been made of the proper size, they are joined together by a simple square knot, and nicely wound in balls, five inches in diameter, which unwind



from the interior. The bark of the *Ākādamo* is not macerated, but as soon as gathered, the outer bark is separated from the bast. The latter, in strips about three inches wide, is repeatedly doubled and thoroughly broken by the *teeth* at the point of folding. By this means it is soon possible to separate the various layers of bast without any difficulty. The subsequent treatment is the same as of the *Ōhiyo* bark.

The instruments employed in weaving are but seven in number, and while they are of great simplicity, they seem quite efficient for the class of work demanded. They may be enumerated as follows:

- No. 1. *Be'ra*.
- “ 2. *Ō'sha*.
- “ 3. *Be'kofune*.
- “ 4. *Ādā'te*.
- “ 5. *Āho'nishi*.
- “ 6. *Yō'dosini*.
- “ 7. *Ga'masa*.

With the exception of the *bera*, which is usually maple, all the implements are made of some soft wood, such as pine. The only instrument used for making and carving them, is a small sheath knife, having a slightly curved blade about six inches in length. Oftentimes the Aino will call into requisition all his skill in carving, to produce an elaborate set of instruments, while in the majority of cases they are left quite plain. The general forms and sizes will be understood from the accompanying figures. With the exception of Figs. 1, 3, 7, the instruments are perfectly plain. In the *ōsha*, Fig. 2, the bars are of such number as to admit the use of one hundred and sixty-five warp threads. The *bera* is used only for the purpose of tightening the threads. The *āhonishi*, or shuttle, usually holds enough thread to complete about three feet of cloth.

To prepare the threads for the loom, several sticks, one foot long, are driven into the ground constituting the house floor, arranged as shown in Plate II, from 1-7. The number and distance apart, vary according to the length of the threads to be used, consequently of the cloth to be made. Two balls of thread, prepared as previously described, are then selected and unwound together, thus greatly facilitating the operation. The threads start at 1, turn 2 and pass around peg 1 again, thence to 4-3, and so on, when after passing the last peg, 5, they return

over the same course to 1. This process is repeated until, without counting, the operator thinks she has enough threads to fill

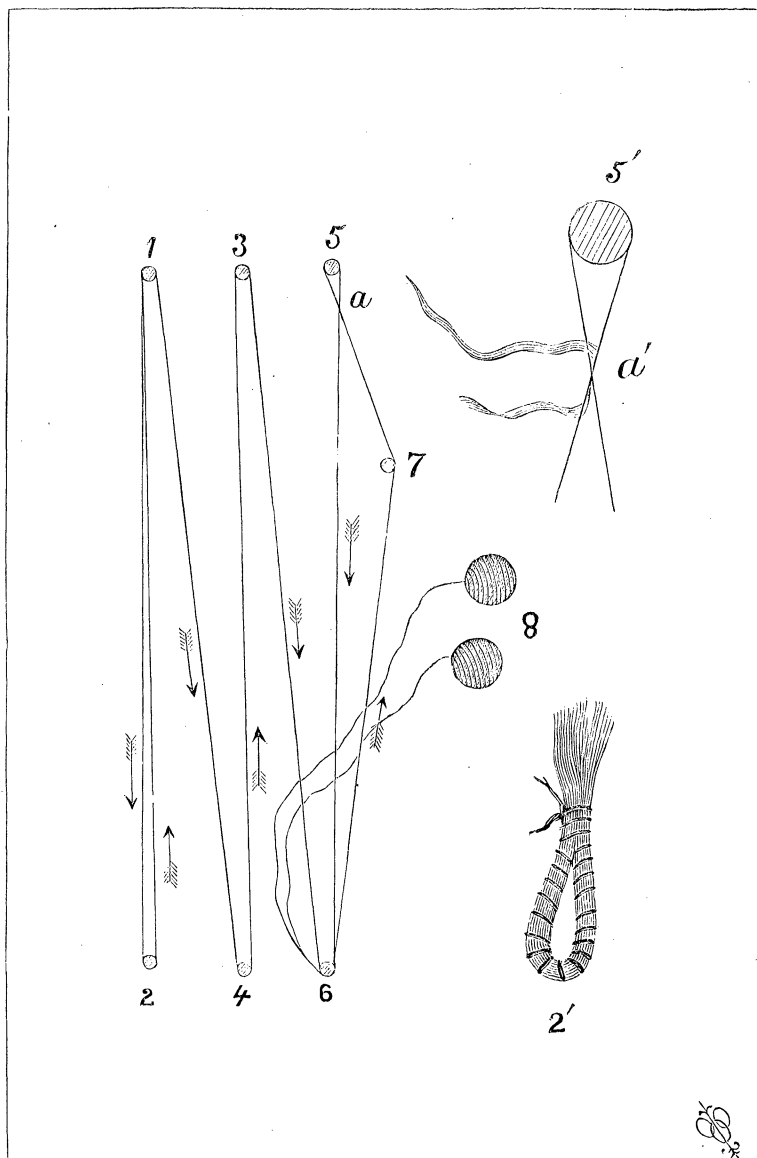


PLATE II.—Method of Stretching and Tying Warp threads.

the loom. Between pegs 5 and 6, the threads are crossed each time by a simple twist, as shown at *a*, and secured by a side peg,

7. Thus is accomplished the crossing which, later, serves to separate the woof threads. The proper number of threads obtained, they are tied at various intervals, a strip of bark is passed each side of the cross at  $\alpha$ —shown more distinctly at  $\alpha'$ , Fig. 5'—to keep the threads from uncrossing, and the loop at 2, shown in Fig. 2', is well wound to keep the threads of each series distinct. The pegs are then drawn, and the operator has a single bundle of threads with a loop at each end. The loop of each thread at 5 is then passed through the *ōsha*, so that the latter will be between the crossing  $\alpha'$  and the longer portion of the threads. The *yōdosini* is next passed through the loop 5, and serves to keep the threads in position, as well as a straining stick by which the warp may be kept at proper tension. At a distance of four or five feet from the *ōsha*, the *ādate* is secured to the threads and passed through a looped string fastened to some firm object. By means of a string passing around the body, and secured to each end of the *yōdosini*, the operator, who sits upon the floor, can easily regulate the tension of the threads by bringing all strain upon the *ādate*. The *gāmasa* is placed within a few inches of the *ōsha*, but between it and the cross of the threads; its only use is to properly separate the upper and lower series of threads, to permit the action of the *āhonishi*. The *bekofune* occupies a position near the *gāmasa*, about one-half way between it and the *yōdosini*. Small twine is then passed over it and looped under each warp thread of the lower series, thus forming a simple means of bringing either series of threads to the top, and varying the cross of the warp to correspond with the movement of the *āhonishi*. The position of parts will be readily understood from an inspection of Plate III.<sup>1</sup>

The size of the cloth is quite variable, since the Ainos seldom count and have no means of accurate measurement. Thus in stretching the warp threads the operator obtains more than enough to fill the loom, the extra ones are dropped out and the cloth will have a maximum width of 13.5 inches. If, however, not enough threads were taken to fill the loom, no more are added. The usual length of the cloth is six and a-half times the

<sup>1</sup> EXPLANATION OF PLATE III.—1. *Gamasa*. 2. *Ōsha*. 3. *Bekofune*. 4. *Yōdosini*. 5. *Adate*. 6. Position of operator.  $\alpha'$  Cross of threads =  $\alpha'$  Plate II. A. Pattern for front skirt of coat. B. Pattern for collar. C. Pattern for cuff.

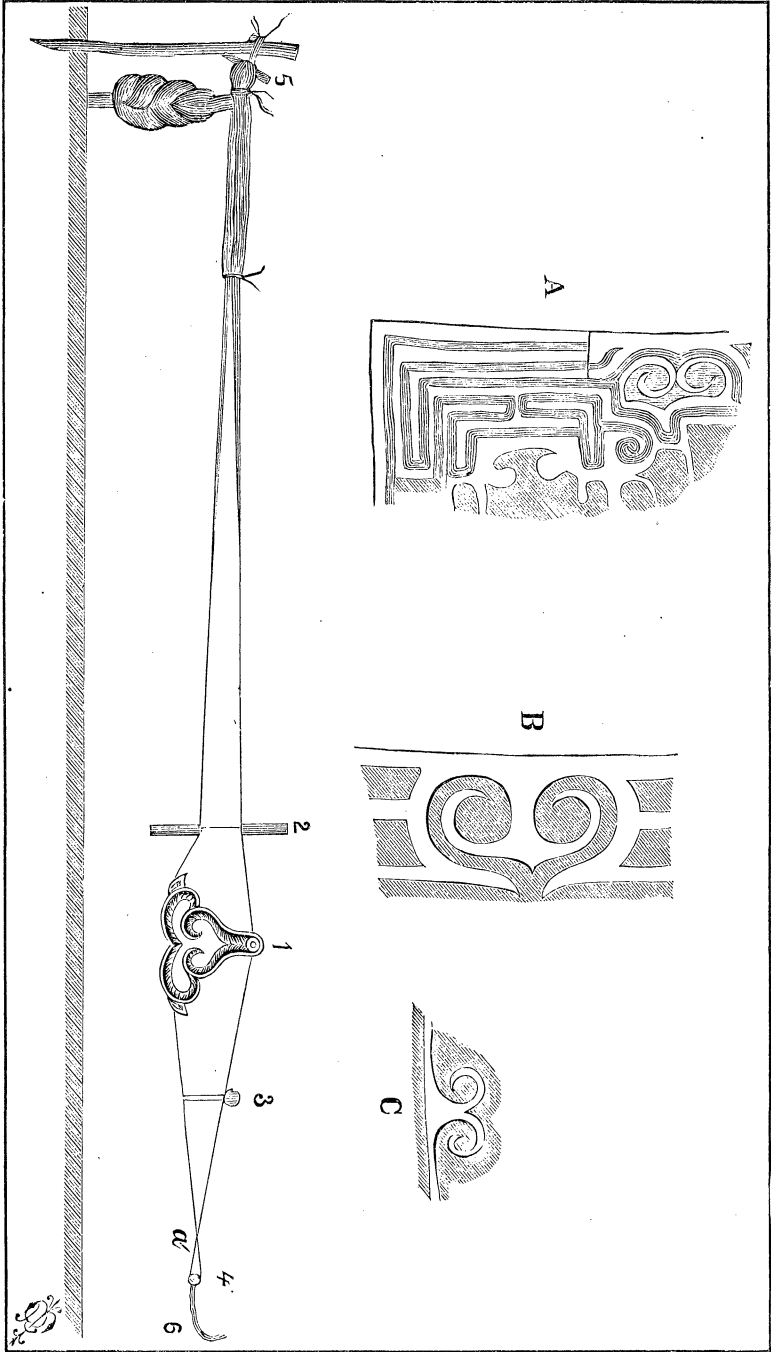


PLATE III.



length of the expanded arms, and as this latter will average five feet, we find the total length of cloth approximating thirty-two feet in round numbers.

After the thread has been prepared, such a piece of cloth can be made in from three to four days, according to the skill of the operator, who is always a woman.

The color of the finished fabric is always that of the bark from which it is made, though uniformity is rare, owing to discoloration of the threads during preparation. If made from Ōhiyo, the color is usually brown, with slight inclination to red, while that made from the Ākādamo is invariably of a bright tan color.

As an article of clothing, for which use alone it appears to be utilized, the Aino cloth has several good qualities. It is very coarse in texture, as would be expected from the nature of the material, but it possesses great strength and wears out slowly; while its meshes are so close, and the threads so compact, that it is completely proof against ordinary rains, on which account the Japanese make great use of it for rain coats.

The Ainos make yet another kind of cloth out of fiber obtained from a species of *Urtica*. This, however, is only made in small quantities, since its use is restricted to burial purposes.

The garments are made in the most simple manner, the breadths being cut without any bias. Nearly all are ornamented with some simple figure, either blue or white, though red and green are not unfrequently used. Plate III will show some of the most characteristic patterns, which were copied from the dress of a chief's wife, and are very good representations of the more elaborate forms.

In addition to the buskins the only garment worn is a coat reaching somewhat below the knees, and fastened at the waist by a girdle. Upon this one garment the women often lavish all their skill in decorating, and thus the coats of chiefs—more especially their wives and children—not unfrequently make a great display of gaudy trimming. The ornamentation, however, often lacks greatly in symmetry, as can be seen by the figures.